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› Bussmann BP/MDL-2 2 Amp Time Delay Glass Tube Fuse Instruction Manual

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Model: BP/MDL-2

1. PRODUCT OVERVIEW

The Bussmann BP/MDL-2 is a 2 Amp, 250 Volt, time-delay glass tube fuse. This fuse is designed to provide circuit protection in various applications, including appliances and consumer electronics. Its time-delay characteristic allows for temporary overcurrents, such as motor startup surges, without immediately opening the circuit, while still protecting against sustained overloads and short circuits.



Image 1.1: A single Bussmann BP/MDL-2 2 Amp Time Delay Glass Tube Fuse. The fuse features a clear glass tube with a coiled wire element visible inside, and nickel-plated brass end caps.

2. KEY FEATURES

- **Current Rating:** 2 Amps

- **Voltage Rating:** 250 Volts AC
- **Type:** MDL (Time-Delay) Glass Tube Fuse
- **Construction:** Glass tube with nickel-plated brass end caps
- **Dimensions:** 1/4-Inch diameter x 1-1/4-Inch length (6.4 x 31.7mm)
- **Compliance:** UL Listed, meets standard 248-14
- **Application:** Suitable for electronic circuits, appliances, and consumer electronics where time-delay protection is required.

3. SPECIFICATIONS

Specification	Value
Brand	Bussmann
Model Number	BP/MDL-2
Current Rating	2 Amps
Voltage Rating	250 Vac (Note: Product specifications also list 120 Volts, but 250Vac is the fuse rating)
Fuse Type	Time-Delay (MDL)
Material	Glass
Physical Size	1/4-Inch x 1-1/4-Inch (6.4 x 31.7mm)
Compliance	UL Listed (Standard 248-14)
Mounting Type	Through-Hole Mount (for fuse holders)
Item Weight	0.64 ounces
UPC	051712813389

4. INSTALLATION AND REPLACEMENT

Fuses are critical safety devices designed to protect electrical circuits from overcurrent. Proper installation and replacement are essential to ensure continued safety and functionality of your equipment.

4.1 Safety Precautions

- **Disconnect Power:** Always disconnect power to the equipment before inspecting or replacing fuses. Failure to do so can result in electric shock or damage to the equipment.
- **Verify Ratings:** Ensure the replacement fuse matches the original fuse's voltage, current, and type (e.g., time-delay, fast-acting). Using a fuse with incorrect ratings can lead to inadequate protection or unnecessary blowing.
- **Use Proper Tools:** Use non-conductive tools, such as a fuse puller, to remove and install fuses, especially in tight spaces.

4.2 Replacement Procedure

1. **Identify Blown Fuse:** A blown glass tube fuse typically shows a broken or vaporized filament inside the glass tube.
2. **Power Off:** Turn off and unplug the equipment from its power source.

3. **Locate Fuse Holder:** Identify the fuse holder within the equipment. Refer to the equipment's owner's manual for the exact location.
4. **Remove Old Fuse:** Carefully remove the blown fuse from its holder. This may involve twisting a cap, pulling a tray, or using a fuse puller.
5. **Insert New Fuse:** Insert the new Bussmann BP/MDL-2 fuse into the fuse holder, ensuring it is seated correctly and securely.
6. **Restore Power:** Once the new fuse is installed, close any access panels, plug in the equipment, and restore power.

If the new fuse blows immediately, there may be an underlying electrical issue with the equipment that requires professional diagnosis.

5. OPERATION

The Bussmann BP/MDL-2 fuse operates passively as a safety device. When the current flowing through the circuit exceeds 2 Amps for a sustained period, the fuse's internal element will melt, opening the circuit and preventing damage to the protected equipment. The "time-delay" characteristic means it can withstand temporary current surges (inrushes) that are common during the startup of certain electrical components like motors, without blowing prematurely.

A properly functioning fuse remains a closed circuit, allowing current to flow normally. Its operation becomes apparent only when an overcurrent condition occurs, at which point it sacrifices itself to protect the circuit.

6. MAINTENANCE

Fuses like the Bussmann BP/MDL-2 are maintenance-free components. They are designed for single-use protection. Once a fuse has blown, it must be replaced with a new fuse of the identical type and rating. Do not attempt to repair a blown fuse.

Regularly inspect fuse holders and surrounding wiring for signs of corrosion, overheating, or loose connections, especially in environments subject to vibration or moisture. Address any issues promptly to ensure reliable circuit protection.

7. TROUBLESHOOTING

7.1 Fuse Blows Immediately After Replacement

- **Incorrect Fuse Rating:** Verify that the replacement fuse (BP/MDL-2) matches the exact specifications (2 Amp, 250V, time-delay) required by the equipment. Using a fuse with a lower current rating or a fast-acting fuse instead of a time-delay fuse can cause it to blow prematurely.
- **Short Circuit:** An immediate fuse blow often indicates a direct short circuit within the equipment. This requires professional electrical diagnosis and repair.
- **Overload:** The equipment may be drawing more current than its design allows, possibly due to a faulty component or an excessive load.

7.2 Equipment Not Functioning (Fuse Appears Intact)

- **Subtle Break:** Sometimes, a fuse filament can break without obvious signs. Use a multimeter to test for continuity across the fuse. A good fuse will show continuity (very low resistance).
- **Other Faults:** If the fuse tests good, the issue lies elsewhere in the equipment's electrical system, such as a faulty switch, component, or wiring.

Always consult a qualified technician for complex electrical troubleshooting and repairs.

8. SAFETY INFORMATION

- **Electrical Hazard:** Working with electricity can be dangerous. Always ensure power is disconnected before handling fuses or internal components of electrical devices.
- **Fuse Matching:** Never replace a fuse with one of a higher current rating or a different type (e.g., replacing a time-delay with a fast-acting fuse if the circuit requires time-delay). This can lead to severe equipment damage, fire, or personal injury.
- **Environmental Conditions:** Store fuses in a dry, cool environment. Avoid exposure to extreme temperatures or corrosive substances.
- **Proposition 65 Warning:** This product may expose you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

9. WARRANTY AND SUPPORT

The Bussmann BP/MDL-2 fuse comes with a standard manufacturer's warranty. For specific warranty details or technical support, please refer to the official Bussmann website or contact their customer service department. The warranty description provided states "Warranty".

For additional information or assistance, please visit the [Bussmann by Eaton website](#).

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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